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The second of these papers contains an analysis of the flora of the various mountain grasslands, those of the montane zone receiving most attention. Many species are common to the montane and subalpine zones, rather more to the montane and plains, while a smaller number are limited to either the northern or the southern montane zones only. Little attempt is made to analyze the composition and dynamics of the various grassland associations.—GEO. D. FULLER.

Fungus lore.—In his presidential address before the British Mycological Society in 1914, BULLER[25] has given a very interesting account of what he calls the fungus lore of the Greeks and Romans. It is an admirable résumé of the ancient literature of fungi, and gives to the general botanist much information which he will prize. Such topics as the following suggest the kind of information presented: edible and poisonous fungi, the dawn of mycology, the first known illustration of a fungus, the rust disease, the origin of fungi, the medicinal properties of fungi, the origin of poisons in fungi, the cultivation of fungi, the misuse of classical names by LINNAEUS, etc. It is shown that the Greeks and Romans were familiar with many kinds of edible and poisonous fungi. As to the origin and reproduction of fungi, they were in complete ignorance, in general being contented to accept a theory of spontaneous generation.

In a presidential address before the Royal Society of Canada in 1915, BULLER[26] continues the publication of his historical researches by presenting an account of "MICHELI and the discovery of reproduction of fungi."—J. M. C.

Blooming period of Dendrobium.—RUTGERS and WENT[27] have investigated the factors concerned in the blooming of *Dendrobium crumenatum*, whose flowers open simultaneously on different individuals. They find that this coincident blooming of different plants depends upon the prevailing external conditions; and since these may vary in different places, the blooming period shows local variations. They conclude that light cannot exert any definite influence on the time of blooming, although it influences the number of flowers; and therefore they consider temperature or atmospheric moisture, or both factors together, to be responsible. The development of the flowers proceeds slowly up to a definite stage, at which they remain until some inhibitory influence is resolved by external factors. When this has occurred, the last stage in the opening of the flowers is accomplished in a few days. The external conditions result in so vigorous a development of the flowers that the enveloping scales are burst.—J. M. C.

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[25] BULLER, A. H. R., The fungus lore of the Greeks and Romans. Trans. British Mycol. Soc. pp. 66. 1914.

[26] BULLER, A. H. R., MICHELI and the discovery of reproduction in fungi. Trans. Roy. Soc. Canada **9**:1–25. *pl. 4.* 1915.

[27] RUTGERS, A. A. L., and WENT, F. A. F. C., Periodische Erscheinungen bei den Blüten des *Dendrobium crumenatum* Lindl. Ann. Jard. Bot. Buitenzorg **14**:129–160. *pl. 22. figs. 5.* 1915.

Morphology of Gnetum.—PEARSON[28] has contributed much to our knowledge of *Gnetum*, a genus so suggestive of a relationship to angiosperms as to deserve the most critical study. The present paper is a well organized summary of the known facts in reference to the genus, and while the argument for angiosperm affinity is not convincing, it shows that the case is still open. PEARSON sees in the behavior of the fusing nuclei of *Welwitschia* and *Gnetum* too much suggestion of the behavior of the polar nuclei in angiosperms to be passed over lightly. As the author remarks, "while the whole question is involved in much obscurity, it is surely not desirable at the present stage of inquiry that the search for a primitive type of endosperm, from which that of the angiosperm may be derived, should cease." Aside from the phylogenetic discussion, the paper analyzes the observed facts and theories in reference to the strobilus or "spike" of *Gnetum* in a most suggestive way.—J. M. C.

Temperature of leaves in winter.—Using careful methods of determining differences of temperature by an electrical apparatus, EHLERS,[29] working at Ann Arbor, Michigan, upon *Pinus Laricio*, found that the leaves through the absorption of radiant energy maintain during the winter temperatures of 2–10° C. higher than the surrounding air. For the month of February, 650 readings taken between the hours of 8:00 A.M. and 3:00 P.M., under all kinds of weather conditions, including both cloudy and bright days, gave an average differential temperature of 3°06 C. Increased photosynthetic activity resulting from such increases in temperature would seem to be of considerable importance, and would tend to explain the presence and accumulation of the reserve food material found in evergreen leaves in winter by various workers. EHLERS was unable, however, to obtain any conclusive evidence of carbohydrate formation during the months of January and February —GEO. D. FULLER.

Structure of Alaria.—In a recent publication of the Puget Sound Marine Station, Miss KIBBE[30] describes the structure of *Alaria fistulosa*. In many features she finds a close resemblance to other Laminariaceae. The chief purpose of the paper is to trace the development of the fistulose or chambered character of the midrib. Severe strain during growth, resulting from continued transverse and radial division of cortical cells after the cells of the medulla

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[28] PEARSON, H. H. W., Notes on the morphology of certain structures concerned in reproduction in the genus *Gnetum*. Trans. Linn. Soc. London **8**:311–332. *pl. 31, 32.* 1915.

[29] EHLERS, J. H., The temperature of leaves of *Pinus* in winter. Amer. Jour. Bot. **2**:32–70. 1915.

[30] KIBBE, ALICE L., Some points in the structure of *Alaria fistulosa*. Puget Sound Marine Sta. Publ. **1**:43–57. *pls. 8, 9.* 1915.